

**APPLICATION TO THE DEPARTMENT OF THE ENVIRONMENT AND
WATER RESOURCES ON THE
SHARK BAY PRAWN MANAGED FISHERY**

*Against the Guidelines for the Ecologically Sustainable Management of
Fisheries*

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Department of Fisheries
Government of Western Australia



Fish for the future

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TABLE OF CONTENTS

1. BACKGROUND.....	3
2. KEY CHANGES IN THE SHARK BAY PRAWN MANAGED FISHERY SINCE ITS LAST ASSESSMENT	3
3. PROGRESS IN IMPLEMENTING RECOMMENDATIONS	4
4. CONCLUSION.....	7

Appendix

- Appendix 1 - State of the Fisheries Report 2002-2003
- Appendix 2 - State of the Fisheries Report 2003-2004
- Appendix 3 - State of the Fisheries Report 2004-2005
- Appendix 4 - State of the Fisheries Report 2005-2006
- Appendix 5 - Fisheries Management Paper 222

Additional Information

- 1. Application to DEW for the Shark Bay Prawn Managed Fishery
- 2. DEW Assessment of the Western Australian Shark Bay Prawn Trawl Fishery

1. BACKGROUND

The purpose of this report is to update the Department of the Environment and Water Resources (DEW) on changes in the Shark Bay Prawn Managed Fishery (the Fishery) to enable its re-assessment against the *Guidelines for Ecologically Sustainable Management of Fisheries* under Part 13 and 13A of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

In November 2001, the WA Department of Fisheries (DFWA) submitted an application to DEW (then Environment Australia) for assessment of the Fishery against the *Guidelines for the Ecologically Sustainable Management of Fisheries*, under Part 13 and 13A of the EPBC Act.

On 11 February 2003, the (then) Minister for the Environment and Heritage amended the list of exempt native specimens to include all specimens that are or are derived from fish or invertebrates, taken in accordance with the *Shark Bay Prawn Managed Fishery Management Plan 1993* effectively declaring the Fishery as exempt from Part 13 and 13A of the EPBC Act for a period of five years. The exemption will expire on 1 January 2008.

The exemption came with 10 recommendations, focused on ensuring continued good management practices in the Fishery.

A copy of the DFWA application and the DEW assessment report and letter of approval are available on the DEW website

<http://www.environment.gov.au/coasts/fisheries/wa/prawn/index.html>

Further information on the Fishery can also be obtained from the annual *State of the Fisheries* report. *State of the Fisheries* reports published since the original assessment (2002-03, 2003-04, 2004-05 and 2005-06 are presented as Appendices 1-4 to this report) and can also be downloaded at <http://www.fish.wa.gov.au/docs/sof/>

2. KEY CHANGES IN THE SHARK BAY PRAWN MANAGED FISHERY SINCE ITS LAST ASSESSMENT

- A trial of quad gear has been underway for the past 2 years under a *Fish Resources Management Act 1994* (FRMA) exemption. This trial has been successful from both an industry and research (assessment of gear efficiency) perspective. A reduction in drag and increase in swept area is the main factor when moving from twin to quad gear. The reductions in drag increases both fuel and catch efficiency. Having assessed the change in efficiency associated with moving from twin to quad gear, DFWA can ensure that this is taken into account when determining sustainable effort and catch rate levels for the Fishery.
- The ongoing use of quad gear, unitization of head rope length, and removal of the 375 boat unit rule (N.B. the 375 boat unit rule has effectively been removed under an FRMA exemption) are to be formalised by a management plan amendment prior to the 2008 fishing season.
- Associated with the move to quad gear, and to further improve the ongoing economic viability of the fishery in 2007 only 18 of the 27 licences for the fishery will be active. The total headrope length being operated has been reduced by 10% under an industry agreement. Industry is currently investigating re-structure options to bring about a permanent reduction in the size of the fishing fleet.

- Since the Fishery was initially assessed, there has been an increase in the level of fishery independent surveys. Surveys are now conducted every month between March and August and provide catch rate and size composition data, which is used to manage sustainability and to maximise economic return. Monitoring of the size composition of commercial prawn catches, as foreshadowed in DFWA's original submission, is therefore no longer considered necessary.
- Further to the last assessment, DFWA has made progress towards addressing bycatch issues, including the full implementation of Fish Escape Devices (FEDs). A Fisheries Research and Development Corporation (FRDC) project has also been undertaken to examine differences in species richness and abundance between trawled and untrawled areas, and found no significant differences. The final report on this project is expected to be available late in 2007 and some further details of the project's findings are presented later in this report.
- DFWA is currently developing a bycatch action plan.
- Following similar work in other major WA fisheries, a strategic management review of the Shark Bay Prawn and Shark Bay Scallop Managed Fisheries is currently being undertaken. In association with this review, an FRDC project to investigate the effect of trawling (including prawn trawling) on scallop recruitment has been approved.

3. PROGRESS IN IMPLEMENTING RECOMMENDATIONS

- 1. Opportunity should be provided to conservation, community, recreational fishing and world heritage area management interests to participate in the processes of the main advisory body to the WA Fisheries Minister for this fishery. DFWA should also ensure that any relevant indigenous interests are considered through appropriate consultative mechanisms.**

The Joint Trawl Management Advisory Committee (MAC) was established in January 2002 to provide advice to the Minister on matters relating to the Shark Bay Prawn, Shark Bay Scallop and Exmouth Gulf Prawn Managed Fisheries.

Commercial, conservation and recreational interests are included in the consultative process through membership of the MAC. The committee meets 1 to 2 times per year.

Currently, the structure of the committee is as follows:

- Independent chair
- 8 members with expertise in the commercial prawn and scallop fishing industry
- 1 member with recreational fishing sector expertise
- 1 member with community sector expertise
- 1 member with conservation sector expertise
- Chief Executive Officer (ex officio) or nominee

The Committee does not include a specific position for a world heritage area representative or a member of the indigenous sector. However, to ensure that world heritage and indigenous interests are included in the MAC consultation process, when relevant or deemed appropriate they are consulted. DFWA is also represented at World Heritage scientific and community advisory committee meetings, providing the opportunity for World Heritage interests to raise any issues of concern with DFWA.

- 2. The ESD report, including all performance measures, responses and information requirements, should be formally incorporated into the management regime and decision making process within one year, with a clear timeframe for implementation.**

DFWA reports against the performance measures for the Fishery in the annual *State of the Fisheries Report*. DFWA liaises with Industry on an annual basis to determine the fishing arrangements and catch rate thresholds for the coming year. This regular review ensures management arrangements are conducive with maintaining resource sustainability.

- 3. DEW should be informed of any changes to the management plan or managerial commitments in the ESD report.**

There have been no substantive amendments to the legislated management plan for the Fishery since its original assessment.

However, a trial of quad gear has been underway for some time under a FRMA exemption. This trial has been successful from both an industry and research (assessment of gear efficiency) perspective. The ongoing use of quad gear, and unitisation of headrope, is to be formalised by amendment of the management plan in time for the 2008 fishing season.

In association with unitization of head rope, the 375 boat unit rule is to be formally abolished by a management plan amendment. A FRMA exemption is currently in place, which allows boats greater than 375 boat units to operate within the Fishery.

Bycatch reduction devices (BRDs), in the form of grids, have been in place within the Fishery for some years, however during 2003 trials of secondary BRDs in the form of FEDs commenced. During 2005 FEDs were made compulsory in all nets towed, except try nets.

DFWA and industry are currently working together to undertake strategic management reviews of the Shark Bay Prawn and Shark Bay Scallop Managed Fisheries. The Steering Committee formed to undertake the review has released a draft report in the form of *Fisheries Management Paper 222* (Appendix 5) which can be downloaded from <http://www.fish.wa.gov.au/docs/mp/>. It is anticipated that the review will be finalized in the coming months.

- 4. The ESD report should be amended to incorporate timeframes for all management responses to breaches of performance measures.**

Over the last 3 years, the Fishery has developed a real time management response program to ensure sustainability and also to enhance economic return to the Fishery through maximising prawn sizes.

A major element of the ESD report was the explicit determination of the operational objectives and performance indicators and measures that are used to assess the performance of the Fishery. The ESD report also outlined specific management responses to be implemented if performance limits were exceeded. These include varying the starting date of the season, a reduction in the length of the season and area closures.

Improvements in knowledge and changes in fishing strategies over time mean that there is a need to be able to readily modify fishery performance indicators as appropriate, particularly in fisheries where there is variable recruitment such as prawns. The DFWA undertakes an annual pre season abundance survey and based on the outcomes of the survey the DFWA works with industry to set catch rate thresholds for the coming year. These catch rate thresholds and real time information on catch rates from Industry determine the period for which the Fishery remains open.

- 5. Permitted byproduct should be limited to species currently harvested, with a robust system developed to add or remove species as appropriate. Suitable catch triggers should be developed to ensure any change in targeting behaviour can be detected and addressed as it occurs. Management responses should be clarified, with timeframes for implementation, to address such changes, so that the management arrangements are able to minimise threats to byproduct species.**

A draft Fisheries Management Paper titled "Managing the Take of Byproduct in Managed Fisheries in Western Australia" is working towards meeting this recommendation.

It is proposed to manage the take of byproduct in managed fisheries by including a schedule within the management plan which specifies a list of byproduct species historically caught in the Fishery and a corresponding number/catch limit. The Minister has given his in-principal support for this strategy to deal with the take of byproduct.

The DFWA's Research Division is in the progress of compiling the historical byproduct catch data for all of the trawl fisheries in order to produce schedules specific to each fishery.

The initial results of the FRDC Biodiversity project (see Recommendation 7) have also provided an inventory of bycatch (including byproduct) species caught at fixed sites throughout Shark Bay and have provided information on the spatial distribution of byproduct species. The final report on this project will be completed by late 2007.

- 6. DFWA should participate in any cross-jurisdictional activities regarding relevant target and byproduct species, including squid.**

DFWA currently participates in various cross-jurisdictional activities in order to ensure sustainability of the State's fish stocks. For example, DFWA regularly engages DEW regarding interaction with protected species and also consults with the Department of Agriculture, Forestry and Fisheries regarding the Offshore Constitutional Settlement and with the Australian Fisheries Management Authority (AFMA) on cross-jurisdictional fishery issues.

DFWA has not had the need to consider any cross-jurisdictional activities regarding species taken or activities within the Fishery.

- 7. Ongoing monitoring should be implemented sufficient to identify long-term trends in bycatch between fished and unfished areas to ensure that information used in the risk assessment for the fishery remains based on accurate and current data.**

The FRDC Biodiversity project is working toward meeting this recommendation. The final report will be out in late 2007 but preliminary results indicate high species richness occurred in trawled sites as well as untrawled sites. The maximum fish and invertebrate species richness was found in the northern and southern extremes of the prawn trawl grounds, and the minimum was found at the northern limits of Shark Bay. Similarly, no consistent patterns were observed with species evenness and diversity indices when comparing trawled and untrawled sites. Differences in diversity measures were observed both between sites and sites within assemblages at a given point in time (spatial differences), and from year to year at each sample location (temporal differences). However these differences were not consistent and were not attributable to whether a site was trawled or not. This indicates that many other factors in addition to trawl impacts are important in species richness and diversity.

One of the main objectives of this study was to compare the faunal composition between trawled and untrawled areas and if the faunal composition was similar, then it was highly likely that closed areas act as refuges for the majority of those species impacted by trawling. Faunal composition was similar in trawled and untrawled areas in general and therefore it is sufficient that the principal form of monitoring (and indeed management) of species diversity matters in the Shark Bay fisheries is the extent of the trawled areas. The percentage of area

trawled should not exceed that observed in recent years (approximately 40% of area of the fishery open to trawling).

8. The importance of specific areas and habitats to applicable bycatch species during all stages of their life cycle should be considered when applying the results of biodiversity research to management arrangements.

The FRDC Biodiversity project addresses this recommendation. It is considered that the substantial permanent area closures and other temporal closures that are applied in the Fishery provide protection to the key life history stages of the majority of the bycatch species caught. The project identified that the 10-20 most common species of fish and invertebrates could be used as indicator species (for trends in abundance and diversity measures) in Shark Bay. These are all relatively short-lived, abundant and widespread in both trawled and untrawled areas.

9. A mechanism should be developed to enable the amendment of management arrangements to respond to new information or future Government plans and policies.

Section 65 of the FRMA provides for the amendment of management plans.

The *Shark Bay Prawn Managed Fishery Management Plan 1993* (clause 10) also provides the ability to alter the management arrangements (season opening and closing dates, area closures, etc.) from year to year according to what is considered to be in the better interests of the Fishery.

10. All protected species interactions by commercial operations should be reported and coupled with an education program to ensure industry has the capacity to make accurate reports.

The Research logbooks completed by licence holders within the Fishery include provisions to report any interactions with protected species.

Reporting requirements are included as a standing item on the agenda for annual pre-season briefings. Fishers' are also given a Protected Marine Species Identification Guide that contains:

- pictures and a brief description of relevant protected species; and
- specific details to include in interaction reports.

4. CONCLUSION

This report should provide sufficient information for DEW to re-assess the Fishery against the *Guidelines for the Ecologically Sustainable Management of Fisheries*, under Part 13 and 13A of the EPBC Act. However, should you require any further information please contact Joanne Kennedy on (08) 9482 7394 or via email Joanne.Kennedy@fish.wa.gov.au